of phages displays a foreign peptide coded by one of said plurality of fragments and such that a plurality of said foreign peptides are overlapping peptides, said plurality of said foreign peptides from said plurality of phages forming the continuous complete pepscan constructed from the at least a portion of the genome of the organism.

A CONT'D.

113. (New) The library of claim 112, wherein the at least a portion of the genome comprises a plurality of genes.

114. (New) The library of claim 113, wherein said plurality of genes comprises a complete set of all genes in the genome coding for a protein.

115. (New) The library of claim 114, wherein said complete set of genes comprises the entire genome of the organism.

116. (New) The library of claim 113, wherein the organism is a pathogen selected from the group consisting of a virus, a bacterium, a yeast and a parasite.

117. (New) The library of claim 113, wherein said virus is selected from the group consisting of retrovirus species, hepatitis species, influenza species, human papillomavirus, herpes species, RSV (respiratory syncytial virus) and cytomegalovirus.

118. (New) The library of claim 113, wherein said bacterium is selected from the group consisting of *Myobacterium tuberculosis* and shigella.

119. (New) The library of claim 113, wherein said parasite is selected from the group consisting of plasmodium species, leishmania species, entamoeba species, giardia species, trichomonas species and trypanosoma species.

A1 CONT'D.

120. (New) The library of claim 113, wherein each of said plurality of foreign peptides overlaps at least one other of said plurality of foreign peptides by one amino acid residue.

121. (New) The library of claim 113, wherein each of said plurality of fragments is cloned into a phage gene coding for a coat protein, such that said foreign peptide is displayed by said coat protein.

122. (New) The library of claim 121, wherein said plurality of phages are filamentous phages and said coat protein is selected from the group consisting of pIII and pVIII.

123. (New) A vaccine against an organism, the vaccine comprising:

(a) the library of claim 113; and

(b) a pharmaceutical carrier.

124. (New) A method for preparing a discontinuous library of a single biological unit of an organism, the method comprising the steps of:

(a) digesting at least a portion of a genome of the organism to form a plurality of fragments, said portion of said genome coding for the biological unit;

(b) ligating said plurality of fragments to form at least one ligated fragment; and

(c) at least partially digesting said at least one ligated fragment to form a plurality of conformational fragments for coding for at least one discontinuous epitope of the single biological unit, thereby forming the discontinuous library.

A' CONT'D

125. (New) The method of claim 124, wherein the single biological unit is a polypeptide.

126. (New) The method of claim 124, further comprising the steps of:

(d) providing a display carrier for said plurality of conformational fragments; and

(e) inserting said plurality of conformational fragments into said display carrier.

127. (New) The method of claim 126, wherein said display carrier comprises a plurality of bacteria and step (e) is peformed by inserting each of said plurality of conformational fragments into genetic material in each of said plurality of bacteria.

128. (New) The method of claim 126, wherein said display carrier comprises a plurality of phages and step (e) is performed by inserting each of said plurality of conformational fragments into genetic material of each of said plurality of phages.

129. (New) The method of claim 128, wherein each of said plurality of conformational fragments is cloned into a phage gene coding for a coat protein, such that said foreign peptide is displayed by said coat protein.

130. (New) The method of claim 129, wherein said plurality of phages are filamentous phages and said coat protein is selected from the group consisting of pIII and pVIII.

131. (New) The method of claim 126, wherein said display carrier comprises a eukaryotic expression vector and step (e) is peformed by inserting each of said plurality of conformational fragments into said eukaryotic expression vector.

132. (New) The method of claim 124, wherein step (c) is performed until said at least one ligated fragment is completely digested.

133. (New) The method of claim 124, wherein in step (b), at least three of said plurality of fragments are ligated to form each ligated fragment.

134. (New) The method of claim 124, wherein the single biological unit comprises a plurality of proteins.

135. (New) A discontinuous library of a single biological unit of an organism, comprising a discontinuous library prepared according to the method of claim 124.

136. (New) A method for vaccinating a subject against an organism, comprising the steps of:

(a) preparing a discontinuous library of a single biological unit of the organism according to the method of claim 124;

(b) placing said discontinuous library in a vaccine carrier; and

(c) administering said discontinuous library in said vaccine carrier to the subject.

137. (New) A method for preparing a conformational peptide of a discontinuous epitope of a single biological unit of an organism, the method comprising the steps of:

(a) digesting at least a portion of a genome of the organism to form a plurality of fragments, said portion of said genome coding for the biological unit;

(b) ligating said plurality of fragments to form at least one ligated fragment;

(c) at least partially digesting said at least one ligated fragment to form a plurality of conformational fragments for coding for the discontinuous epitope of the single biological unit, thereby forming said discontinuous library;

(d) inserting said discontinuous library into an expression system; and

(e) obtaining the conformational peptide from said expression system.

138. (New) The method of claim 137, wherein said expression system comprises a plurality of bacteria, such that step (d) is performed by inserting each of said plurality of conformational fragments of said discontinuous library into genetic material of each of said plurality of bacteria.

139. (New) The method of claim 137, wherein said expression system comprises a plurality of phages and step (d) is peformed by inserting each of said plurality of conformational fragments of said discontinuous library into genetic material of each of said plurality of phages.

140. (New) The method of claim 139, wherein each of said plurality of conformational fragments is cloned into a phage gene coding for a coat protein, such that the conformational peptide is displayed by said coat protein.

141. (New) The method of claim 140, wherein said plurality of phages are filamentous phages and said coat protein is selected from the group consisting of pIII and pVIII.

142. (New) A conformational peptide of a single biological unit of an organism, comprising a conformational peptide prepared according to the method of claim 137.

143. (New) A method for vaccinating a subject against an organism, comprising the steps of:

(a) preparing a conformational peptide of a single biological unit of the organism according to the method of claim 137;

(b) placing said conformational peptide in a vaccine carrier; and

(c) administering said conformational peptide in said vaccine carrier to the subject.

REMARKS

Consideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-111 are in this case. Claims 1-111 have now been cancelled without prejudice. New claims 112-143 have now been added.

In view of the above new claims and remarks it is respectfully submitted that claims 112-143 are in condition for allowance. Prompt notice of allowance is respectfully solicited.

Respectfully submitted,

Mark M. Friedman
Attorney for Applicant
Registration No. 33,883

Date: May 3, 1999